NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE SPECIFICATION

WASTE UTILIZATION

(Acre)
CODE 633

DEFINITION

Using agricultural waste such as manure and wastewater or other organic residue.

PURPOSES

- Protect water quality
- Provide fertility for crop, forage, fiber production and forest products
- Improve or maintain soil structure;
- Provide feedstock for livestock
- Provide a source of energy

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where agricultural waste including animal manure and contaminated water from livestock and poultry operations; solids and wastewater from municipal treatment plants; and agricultural processing residue is generated, and/or utilized.

CRITERIA

General criteria applicable to all purposes

All federal, state and local laws, rules and regulations governing waste management, pollution abatement, health and safety shall be strictly adhered to. The owner or operator shall be responsible for securing any and all required permits or approvals related to waste utilization, and for operating and maintaining any components in accordance with applicable laws and regulations.

Use of agricultural waste shall be based on at least one analysis of the material during the time it is to be used. In the case of daily spreading, the waste shall be sampled and analyzed at least once each year. As a minimum the waste analysis will identify nutrient and specific ion concentrations. As a minimum, Nitrogen, Phosphorus, and Potassium along with salts will be included in the analysis. Where the metal content of municipal wastewater, sludge, septage, and other agricultural waste is of a concern, the analysis shall also include determining the concentration of metals in the material.

Waste will not be applied closer than 100 feet from any well head.

Where agricultural waste is to be spread on land not owned or controlled by the producer, the waste management plan, as a minimum, shall document the amount of waste to be transferred and who will be responsible for the environmentally acceptable use of the waste.

Where municipal wastewater and solids are applied to agricultural lands as a nutrient source, the single application or lifetime limits of heavy metals shall not be exceeded. The concentration of salts shall not exceed the level that will impair seed germination or plant growth.

Max Annual and Lifetime Heavy Metal Additions to the Soils[1]		
Metal	Annual Limit	Lifetime Limit
(name/symbol)	(lbs/ac/yr)	(lbs/ac)
Arsenic (As)	2.2	46.0
Cadmium (Cd)	2.3	33.0
Copper (Cu)	84.0	1500.0
Lead (Pd)	17.0	336.0
Mercury (Hg)	0.95	19.0
Nickel (Ni)	24.0	19.0
Selenium (Se)	5.6	112.0
Zinc (Zn)	157.0	3136.0

[1]From the Code of Federal Regulations, Title 40, Vol 3, Part 503, Sec. 13, July 1 , 1999

Animal shall not be allowed to graze on the land for 30 days after application of biosolids.

Records of the use of waste shall be kept a minimum of five years as discussed in OPERATION AND MAINTENANCE, below.

Additional criteria to protect water quality

All agricultural waste shall be utilized in a manner that minimizes the opportunity for contamination of surface and ground water supplies.

Agricultural waste shall not be land-applied on soils that are frequently flooded, as defined by the National Cooperative Soil Survey, during the period when flooding is expected.

When liquid waste is applied, the application rate shall not exceed the infiltration rate of the soil, and the amount of waste applied shall not exceed the moisture holding capacity of the soil profile at the time of application. Waste shall not be applied to frozen or snow-covered ground.

Additional criteria for providing fertility for crop, forage, fiber production and forest products

Where agricultural waste is utilized to provide fertility for crop, forage, fiber production, and forest products, the practice standard Nutrient Management (590) shall be followed.

Additional criteria for improving or maintaining soil structure

Waste shall be applied at rates not to exceed the crop nutrient requirements or salt concentrations as stated above. Crop nutrients can be planned on a long term for grow out, the practice standard Nutrient Management (590) shall be followed.

Waste may be applied to range or non-irrigated pasture that has a surface slope of less than 2%. There shall a set back of 100 feet from any draw or water channel. There shall be a grass buffer at least 100 feet wide between the application field and any water channel.

Additional criteria for providing feedstock for livestock

Agricultural waste to be used for feedstock shall be handled in a manner to minimize contamination and preserve its feed value. Chicken litter stored for this purpose shall be covered. A qualified animal nutritionist shall develop rations which utilize waste.

Additional criteria for providing a source of energy

Use of agricultural waste for energy production shall be an integral part of the overall waste management system.

All energy producing components of the system shall be included in the waste management plan and provisions for utilization of residues of energy production identified.

Where the residue of energy production is to be land-applied for crop nutrient use or soil conditioning, the criteria listed above shall apply.

CONSIDERATIONS

The effect of Waste Utilization on the water budget should be considered, particularly where a shallow ground water table is present or in areas prone to runoff. Limit waste application to the volume of liquid that can be stored in the root zone.

Minimize the impact of odors of land-applied waste by making application at times when temperatures are cool and when wind direction is away from neighbors.

Agricultural wastes contain pathogens and other disease-causing organisms. Waste should be utilized in a manner that minimizes their disease potential.

Priority areas for land application of waste should be on gentle slopes located as far as possible from waterways. When waste is applied on more sloping land or land adjacent to waterways, other conservation practices should be installed to reduce the potential for offsite transport of waste.

It is preferable to apply waste on pastures and hayland soon after cutting or grazing before re-growth has occurred.

Reduce nitrogen volatilization losses associated with the land application of some waste by incorporation within 24 hours.

Minimize environmental impact of land-applied waste by limiting the quantity of waste applied to the rates determined using the practice standard Nutrient Management (590) for all waste utilization.

PLANS AND SPECIFICATIONS

Plans and specifications for Waste Utilization shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The waste management plan is to account for the utilization or other disposal of all animal waste produced, and all waste application areas shall be clearly indicated on a plan map. See New Mexico Nutrient Management State Specification (590) for all New Mexico table values for waste characterization.

OPERATION AND MAINTENANCE

Records shall be kept for a period of five years or longer, and include the following information::

- Quantity of manure and other agricultural waste produced and their nutrient content
- Dates and amounts of waste application where land applied, and the dates and amounts of waste removed from the system due to feeding, energy production, or export from the operation
- Waste application methods
- Other tests, such as determining the nutrient content of the harvested product
- Calibration of application equipment.

The operation and maintenance plan shall include the dates of periodic inspections and maintenance of equipment and facilities used in waste utilization. The plan should include what is to be inspected or maintained, and a general time frame for making necessary repairs.